



Ministry of Agriculture, Irrigation and Livestock
Department of Horticulture



THE FRUIT TREE NURSERY INDUSTRY OF AFGHANISTAN TRAINING SERIES 1



1

MANUAL

THE FRUIT TREE NURSERY GROWERS' ASSOCIATIONS

written by: Laura V. Imburgia, PHDP Consultant

Series Publication Coordinator: Greg Cullen, Team Leader PHDP



PERENNIAL HORTICULTURE DEVELOPMENT PROJECT

European Commission - EuropeAid/Asie/2006/119984

A PROJECT FUNDED BY THE EUROPEAN UNION



Training Series 1: The Fruit Tree Nursery Industry

Volumes in this Series:

- Manual 1 The fruit tree nursery growers' associations
- Manual 2 The mother stock nursery
- Manual 3 The fruit tree production nursery

Written by:	Laura V. Imburgia, PHDP Consultant
Series Publication Coordinator:	Greg Cullen, Team Leader, PHDP
Editorial Committee:	Greg Cullen, Team Leader, PHDP Juan Ignacio Trives, Project Horticulturist, PDHP Steven Wright, Training Specialist, PHDP Edward Vernon, PHDP Nursery Consultant
Translated into Dari:	Dr. Wais Farda
Translation revision:	Prof. Ghulam Rasoul Samadi

Acknowledgements

We express our gratitude for the contributions received by the following institutions: Roots of Peace – Afghanistan; Aga Khan Foundation – Afghanistan. We very much appreciate the support and help received from the national and provincial staff of the PHDP; in particular, we thank Sharafuddin Sharaf, M. Karim Kashmiri, Moheb Khademi and M. Muzaffar Athar for their technical assistance, photographs and sharing of lessons learned.

References

The material presented in the Training Manual Series 1 The fruit tree nursery industry of Afghanistan, draws on the following sources:

- Adams, C.R., Bamford, K.M., Early, M.P. 2008. *Principles of Horticulture*. 5th Edition. Elsevier Ltd. UK.
- ATTRA. 2009. *Sustainable Agriculture Series*. National Sustainable Agriculture Information Service [online].
- Blanke, M.M. 1996. *Soil respiration in an apple orchard*. Environmental and Experimental Botany 36:339-341.
- Childers, N.F., Morris, J.R., and Sibbett, G.S. 1995. *Modern Fruit Science*. Horticultural Publications, Florida.
- Diekmann, M., Putter, C.A.J.. 1996. *Stone Fruits*. FAO/IPGRI.
- Dumroese, R.K., Landis, T.D., Luna, T. and Hernandez, G. 2008. *Simple methods for raising tree and shrub seedling in Afghanistan*. USAID-USDA.
- Earnshow, S. 2004. *Hedgerows for California Agriculture*. Western Sustainable Agriculture Research and Education. Community Alliance with Family Farmers.
- European and Mediterranean Plant Protection Organization. 2000. *Scheme for the Production of Healthy Plants for Planting - Nursery Requirements* [online].
- Ferree, M.E., Krewer, G. 1999. *Propagating Deciduous Fruit Crops Common to Georgia*. Cooperative Extension Service University of Georgia College of Agricultural and Environmental Sciences.
- FAO. 2009. FAOSTAT Database [Online].
- Foerster, P., Varela, A. And Roth, J. 2001. *Best Practices for the Introduction of Non-Synthetic Pesticides in Selected Cropping Systems*. Eschborn.
- Giunchedi L. 2003. *Malattie da virus. Viroidi e fitoplasmi degli alberi da frutto*. Il Sole 24 Ore, Bologna.
- Hartmann, H.T., Kester, D.E., Fred T. Davies, F.T.Jr, and Geneve R.L. 1997. *Plant propagation: principles and practices*. Prentice Hall, New Jersey.
- Jackson, D.I. and Looney, N.E. 1999. *Temperate and subtropical fruit production*. CABI Publishing, London, UK.
- Malik, M.N. 1994. *Horticulture*. National Book Foundation. Islamabad.
- Magdoff, F. and van Es, Harold. 2000. *Building soils for better crops*. Sustainable Agriculture Network.
- Ministry of Agriculture, Irrigation and Livestock. 2005. *Master Plan for Agriculture, Irrigation and Livestock*. Afghanistan.
- Newman, Y.C., Wright, D.W., Mackowiak, C., Scholberg, J.M.S., and Cherr C.M. 2007. *Benefits of cover crops for soil health*, IFAS Extension, University of Florida.
- Pesticide Action Network (PAN). 2005. *Field guide to Non-chemical pest management*. Hamburg.
- Rost, T., Barbour, M., Stocking, C.R., Murphy, T. 2006. *Plant Biology*. 2nd Edition. University of California, Davis. Thompson Brooks/Cole.
- Sandor, F. 2007. *Vegetative propagation techniques*. Roots of Peace - USAID, Jalalabad-Afghanistan.
- Sandor, F. 2008. *Soil testing*. Roots of Peace - USAID, Jalalabad-Afghanistan.
- Waterman, P., Hogue, E.J., and Quamme, H. 1993. *The Home Nursery - A Production Manual*. British Columbia.
- Wertheim S. J., 1998. *Rootstock Guide*. Netherlands.

Permission is granted to reproduce any or all portions of this publication provided the publisher, title and editor are properly acknowledged.

TABLE OF CONTENTS

INTRODUCTION	1
THE HORTICULTURE SECTOR OF AFGHANISTAN	3
1. CURRENT HORTICULTURE SITUATION IN AFGHANISTAN	3
2. STRATEGY FOR DEVELOPING THE FRUIT TREE NURSERY INDUSTRY IN AFGHANISTAN	5
3. THE CASE FOR THE HORTICULTURE ASSOCIATION STRUCTURE IN AFGHANISTAN	6
HOW TO ESTABLISH A NURSERY GROWERS' ASSOCIATION	9
1. THE ORGANISATION TYPE THAT BEST SUITS THE NEEDS OF THE MEMBERS	9
2. IDENTIFICATION OF THE ASSOCIATION MEMBERS	10
3. THE FACILITATOR'S ROLE	10
4. EXTENSION SERVICES IN SUPPORT OF THE NURSERY GROWERS' ASSOCIATION	10
THE ASSOCIATION'S MEETINGS	13
1. THE STARTING POINT: UNDERSTANDING THE PURPOSE OF THE ASSOCIATION AND ITS COLLECTIVE WORK	14
2. LEGAL FRAMEWORK FOR A NURSERY ASSOCIATION	16
3. ESTABLISHING THE FORMAL ASSOCIATION	17
4. THE ASSOCIATION WORK PLAN AND FURTHER ASSISTANCE TO NURSERY GROWERS	18
MARKETING AND MANAGEMENT MANUAL	21
1. WHAT IS MARKETING?	21
2. PLANNING FOR NURSERY GROWERS	23
3. MARKET SEGMENTATION	25
4. MARKET PLANNING	27
5. SALES PLANNING	27
6. PRODUCT DEVELOPMENT	28
7. SELLING BENEFITS	29
8. PRICING OF SAPLINGS	30
9. ASSOCIATION PROGRAMMES	31
ANNEXES	33
ANNEX 1: AFGHANISTAN NATIONAL NURSERY GROWERS ORGANISATION (ANNGO)	33
ANNEX 2: EXAMPLE OF APPROVED ASSOCIATION CONSTITUTION	39
ANNEX 3: ANNGO FRUIT TREE CERTIFICATION SCHEME	45

Manual 1, *The fruit tree nursery growers' associations manual*, intends to provide up-to-date information useful for the establishment of nursery growers' associations in Afghanistan. The topics treated are:

- The current situation of horticulture in Afghanistan
- The rationale of a nursery growers' association
- The legal requirements and key administrative steps required to establish a nursery growers' association

The manual further provides information related to the certification process for nurseries, envisioned to be implemented in the future in Afghanistan.

Trainers and extension personnel will find tools helpful for the establishment of an association, and advice on the human resource development for those associations. The manual has been designed for trainers to assist and train nursery growers interested in establishing associations. It is also suitable for a wider audience as a reference manual, for example institutions working with other agricultural producer associations.

Content of the manual

The manual is divided into four parts:

- Part 1 provides information regarding the horticulture sector in Afghanistan and the strategies for developing the fruit tree nursery industry in the country.
- Part 2 provides reasons why agricultural associations can be useful tools for modernising the perennial horticulture sector in Afghanistan, and guidelines for establishing associations.
- Part 3, "*Facilitating association's meetings*", presents a guide for the facilitators assisting producers in the establishment of a fruit tree nursery association. This section also provides recommendations relevant to the expected nursery certification scheme.
- Part 4 provides information on good marketing practices for fruit trees. A description of the associations' programmes as part of their work plan is also included in this section.

The horticulture sector of Afghanistan

After reading Part 1, you will be able to:

- Understand the context of the horticulture industry of Afghanistan
- Understand the benefits for growers of organising and working together
- Understand the organisational strategy for fruit tree nursery growers in Afghanistan
- Guide nursery growers in the establishment and running of associations

1. Current horticulture situation in Afghanistan

The strategy for the horticulture sector of Afghanistan outlined in Afghanistan's Agriculture Master Plan proposes to position horticulture as a demand-oriented and export-led sector. There are an estimated 600,000 farmers growing horticultural crops, cultivating about 100,000 hectares under intensive irrigated conditions. A modernised horticulture sector is expected to provide alternative livelihoods for millions of people in the country (MAIL, 2005).

The horticultural sector in Afghanistan faces critical constraints:

The expansion of horticulture faces important constraints throughout the value chain. In the 1970's Afghan horticulture was a successful competitor in the world market (for example, Afghanistan's share of the world raisin market used to exceed 20%, MAIL, 2005). Today, the sector has drastically deteriorated. The consequences of decades of war and destruction of orchards, lack of modernization and investments have resulted in the almost total loss of access to international markets. The country lacks an efficient regulatory system for the sector. Appropriate laws and regulations, and a regulated tax system have not been developed in Afghanistan. For instance, imported trees from neighbouring countries, that may be carrying destructive pests and diseases, are allowed to enter and be sold in the market without phytosanitary controls. In addition, Afghanistan lacks reliable statistical information about the horticulture sector, such as number of nurseries, available varieties, threats of pests and diseases, and updated domestic and foreign market information. Horticulture development is also severely constrained by the lack of appropriate infrastructure for storage, processing, transport and marketing.

While nursery capacity has increased, this expansion was unbalanced and in part ill advised. It appears that too many nurseries have been created and too many low quality trees have been produced because extension capacity available to the sector is not commensurate with the needs. Training and support in marketing has not been in step with the growth in numbers of growers.

At the individual nursery level, technical and managerial capabilities are often poor, impacting directly the capacity to adjust production to a demand driven market. These limitations are becoming evident as the country is trying to move back into international markets. Standards of hygiene and phytosanitation are much more stringent and demanding, and vigorously enforced, in many international markets where Afghanistan was successful 40 years ago. In addition, access to farming inputs, such as seeds, fertilizers, tools and machinery is difficult for many growers. Access to credit is particularly difficult. As a result, outdated production technology is still widely used. Perhaps the most critical consequence of these constraints is the absence of commercial nurseries with the capacity to produce high quality planting materials, meeting the standards required for success in international markets. Fruit growers have very limited choice of good quality identified rootstocks and varieties to improve their orchards.



The problem of low value fruit trees

The photo on the left shows saplings from a plant market in Herat. Trees do not have any label, or identity of the variety or rootstock. The health status of the sapling is unknown, and it is possible that many plants were infected with viruses or nematodes.

The roots are exposed to dehydration. It might happen that many trees die before planting or, if still alive, they may not grow well after planting.

On the other hand, the horticulture sector also offers appealing opportunities:

The perennial horticulture sector of Afghanistan has very promising opportunities for development. Horticulture products are of high value. If well managed, their revenues can easily exceed the profits realized from illicit crops. Furthermore, the country has outstanding agroclimatic conditions for fruit production, a unique competitive advantage. Many of Afghanistan's horticulture products can be exported and have potentially good markets. Grapes, raisins, almonds, pistachios, apricots and pomegranates are among the most promising. With appropriate extension support, the private sector is expected to lead the modernisation of the horticulture industry. Key for successful development of the horticulture sector is a modern fruit tree nursery industry.

Long term objectives for fruit tree nursery industry development

The long term objective defined for the fruit tree nursery industry in Afghanistan is the provision of sufficient named, clean and healthy fruit trees to meet the demand for replacement and new plantings of orchards. Improvements in technical and managerial capacities, as well as improved access to agricultural inputs are required for the development of the nursery industry. Overall, the horticulture sector needs to adapt to the quality requirements of modern markets, particularly the export market. The fruit tree nursery industry is with no question the most important link in the value chain.

2. Strategy for developing the fruit tree nursery industry in Afghanistan

The strategy for developing the fruit tree nursery industry in Afghanistan comprises three major interconnected interventions (Figure 1):

- Organise nursery growers: *Establishment and registration of fruit tree nursery associations*
- Standardise and certify planting materials: *Implementation of a system of inspection and certification*
- Develop human resources: *Capacity building of members in aspects related to technical and organisational skills and requirements imposed by the upcoming certification process.*

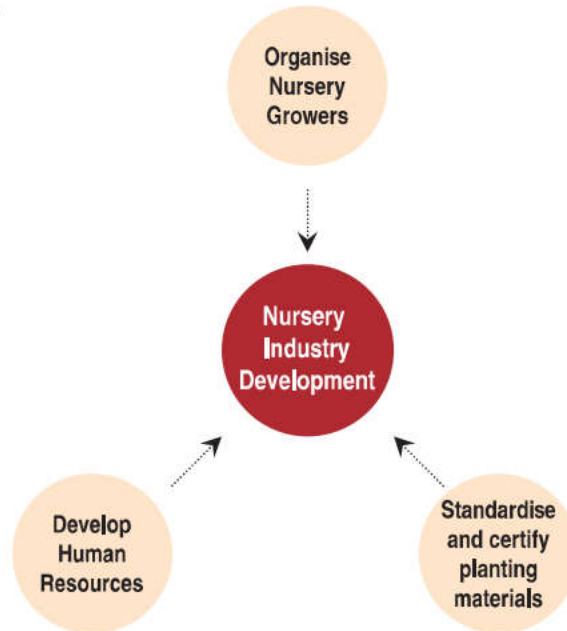


Figure 1: Strategy for developing the nursery industry. The three main interrelated interventions for the development of the fruit tree nursery industry of Afghanistan

Working together is a way of modernising and improving the sector

The improvement of the fruit trees planted in the country cannot be done by individual nursery growers. Improvement and modernisation of the horticulture industry requires integration of the different levels of the value chain and coordination of interventions.

Experience demonstrates that producer associations can offer many benefits. Associations make an extension service more effective, they facilitate the implementation of rules and standards, and they strongly facilitate horizontal learning and capacity building at the producer level ('farmer to farmer learning'). They also allow producers to speak with a unified voice, increasing their effectiveness when dealing with government institutions, for example in the implementation of industry standards, or in setting priorities for resource allocation in infrastructure investments. Farmers associated in groups have better access to technology, expensive resources, and market information.

A successful development of the horticulture sector of Afghanistan requires a modern fruit tree nursery industry.

3. The case for the horticulture association structure in Afghanistan

National and local associations

The fruit tree nursery industry of Afghanistan is highly fragmented with more than 2,500 mostly small-scale nursery growers. This large number makes it difficult to implement innovation to the sector, and to train growers. In response, nursery growers all over Afghanistan have begun a process of working together and creating local nursery grower associations. The first associations were formed in districts with a high concentration of growers. These associations currently include fruit and nut tree nursery growers in their memberships, but it is expected that private sector nursery growers of forest trees and ornamental trees will also become members.

These local associations (in total 22 associations in March, 2009) are federated in a national association, the *Afghanistan National Nursery Growers Organisation* (ANNGO). The ANNGO will become a member of the Afghanistan National Horticultural Development Organisation (ANHDO) (Figure 2).

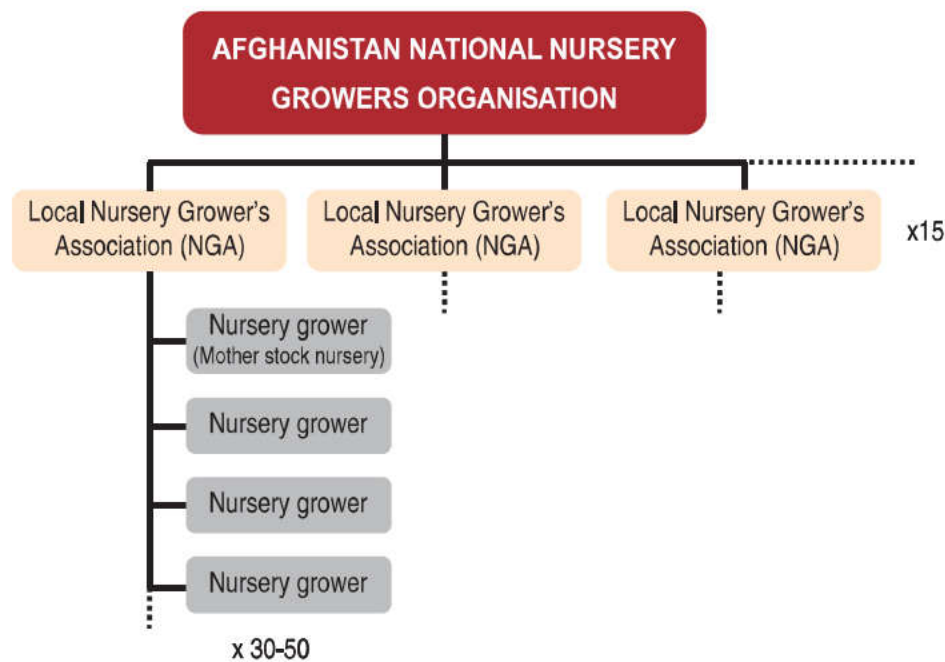


Figure 2: Afghanistan National Nursery Growers Organisation scheme

The role of the Afghanistan National Nursery Growers Organisation (ANNGO) is to:

- Represent nursery growers
- Attract investment in the fruit industry, from both the private and public sector (government and donors)
- Assist in the application of the certification scheme for nursery products
- Facilitate access to technologies and resources (e.g. clean mother stock material, micropropagation laboratory, nuclear stock nursery, licensed varieties)

- Improve the marketing of nursery products (including product promotion; marketing information; production planning; value chain development; etc)
- Influence government policy, for example in limiting unfair foreign or domestic competition (import of trees without phytosanitary controls, sale of trees at subsidized prices, etc)

The roles of the local nursery growers' association at the local level are:

- Define priorities for production to meet market demand
- Improve technical skills of members by organizing group training
- Implement a certification nursery system
- Share mother stock material production
- Share operational, organisational and training facilities, for example a labelling machine, office and meeting room
- Improve access to market information
- Improve planning of marketing initiatives
- The associations can work together to provide specialist services for its members, and to orchard growers, as well. The specialist services the associations could provide include:
 - Budding and pruning services
 - Advice on orchard design and planting
 - Monitoring, evaluation and control services of pest and diseases, and integrated pest management (IPM) advice

The role of the Perennial Horticulture Development Project (PHDP)

The main role of the Perennial Horticulture Development Project (PHDP) in the nursery industry development has been to lead and coordinate the association development. The PHDP has provided leadership in the establishment of the first nursery grower associations, in cooperation with a number of NGOs under the European Commission (EU) funding. The project has also had a prominent role in the formation of the Afghanistan National Nursery Growers Organisation (ANNGO).

PHDP completed the collection of all major fruit and nut tree varieties in the country by the end of 2008. Once enough information is gathered about the varieties that have been collected, the PHDP will set up a **variety recommendation system**, allowing recommendations of varieties in terms of relevant quality properties to orchard growers and to exporters.

Aga Khan Foundation in partnership with PHDP has already initiated a virus testing programme for varieties from the national variety collection. This will be followed by a virus clean-up programme for recommended varieties. The dissemination of clean stock to mother stock nurseries is the foundation of a modern fruit tree nursery industry in Afghanistan.

Part 2

How to establish a nursery growers' association

After reading Part 2, you will:

- Understand the different types of legal organisations in Afghanistan
- Understand the necessary preliminary steps to establish a growers' association
- Understand the role as facilitator in the extension process

1. The organisation type that best suits the needs of the members

There are different types of organisations in Afghanistan. They differ in their objectives, legal limitations and regulations, as is summarized in the following chart:

Social organisations (associations)	Investment organisations	Non-government organisations
<ul style="list-style-type: none"> • Non-profit orientation achieved through cultural, social and professional services and activities • Restrictions to join, unite, or become member in overseas organisations: programme implementation with the support of national organisations only • Limitation of assets to only movable assets • Can receive funds limited to donation, membership fees, and aid from domestic institutions • No commercial activities • Income tax exempted • No reporting obligation • Registration in the Ministry of Justice 	<ul style="list-style-type: none"> • Stock companies, partnerships and individually owned business companies • Right to perform profit activity • Can invest in all economic sectors • Some custom duty exemption on export items produced or assembled in Afghanistan • Can distribute profits • Taxation on profits • Assets belong to shareholders on dissolution or winding up of the company • Registration in the Ministry of Commerce (AISA) <p>Note: Cooperatives are included in this organisation type. Cooperative Law indicates wider applicability than current usage, and should be investigated for any future nursery business organisations.</p>	<ul style="list-style-type: none"> • Non-profit orientation, achieved through cultural, social and professional services and activities • Can engage in economic activities in order to achieve their non-profit objectives • Can use multiple sources of financial support, both from domestic and international sources (grants, donations, etc) • Reporting obligations • Cannot distribute profits to members • No tax on profits • Assets pass to "sponsoring" Ministry on winding up of NGO • Registration in the Ministry of Economy

Non-government organisation is the legal form that best suits the scope of the activities developed by a professional agricultural organisation. This is also the type of organisation that has greater scope for tax exemption.

2. Identification of the association members

It is important to identify the potential members of the association. Members share objectives and a joint, proactive vision. Currently, incentives may be given by various projects and NGOs for producers in various agricultural sectors in Afghanistan to form associations. However, a viable and sustainable producer association rests on a foundation of shared vision and interest, and not on the short term prospects of incentives provided by a development organisation. There are some important principles that should be considered regarding potential members:

- Members have common interests and a shared view of the activities to be developed together.
- Associations are formed by progressive growers. These growers find room for exchanging ideas and knowledge, accelerating the development of the industry.

3. The facilitator's role

The role of the extension personnel is that of a facilitator in a two-way learning process: we want to make available high quality technical information to the farmer, but at the same time we want to learn from the farmer's experiences so that production techniques can be developed that are based on best practices, and tested for and adapted to local conditions.

Typically, a lot of assistance is needed to consolidate a local nursery association. Most of this support needs to be delivered by the extension personnel of the regional MAIL office and local NGOs involved in perennial horticulture projects. The following considerations are useful for extension personnel supporting the establishment of a producers' association:

- Focus on an area with a high concentration of nursery growers.
- Start with one group, and then extend the membership. Depending on the interest and numbers of potential members, over time more than one association may develop in a province.
- Careful understanding of the customs and traditions of your area is important. Often, rural communities have their own way of getting together and it is important to identify those spontaneous groups. They become the nucleus of a successful producer association.

4. Extension services in support of the nursery growers' association

The extension services that the facilitator can provide include:

- Provide training and technical assistance to nursery growers, linked to technical and training programmes offered by PHD Centres.
- Build the managerial and organisational skill capacity of the association members in order to create self sufficient organisations.

- Assist the process of establishing a certification system for nursery products. Provide support in the development, implementation and monitoring of nursery standards.
- Mobilise available support from existing public and private institutions for activities such as technical training, participation in agricultural fairs, field schools, etc.
- Facilitate access to relevant information on the industry, such as market information available from ANHDO, NGOs and other horticulture development programmes (prices and trends, market opportunities, legal and regulatory information, technical innovations, agro-meteorological information, etc.)



Figure 3: it is important to provide growers with a learning environment to achieve the goal of improving production techniques. (K. Kashmiri)

Electronic manual: If you have access to a computer and projector, you can show the following presentation during the growers' association meeting (click below or open the CD accompanying your manual)

➡ **PRESENTATION No. 1: "Nursery growers' associations".**

Part 3

The association's meetings

In this section you will find guidelines to help in the initiation of the meetings and training activities in order to establish a nursery association. Remember your role is to facilitate the process. The purpose is to enable growers to help themselves.

After reading Part 3 you should be able to develop training sessions about:

- How to facilitate the initial meetings for establishing an association
- The legal requirements to create associations in Afghanistan
- How to define the association's work plan



Photo E. Vernon

Facilitating the association's meetings

First meeting

1. The starting point: understanding the purpose of the association and its collective work

- *Objective*

The objective of this meeting is to help nursery growers to understand the concept of an association and the benefits of participating in an association.

- *Procedures*

1. The intention of creating an association should be communicated to the Ministry of Agriculture officials ahead of time
2. The invitation of nurserymen to participate in the meeting may be initially restricted to a limited geographical area
3. Growers should be motivated to work together

The following topics should be discussed with the participants:

What is a nursery association?

- An association is defined as a group of members of the same professional sector (fruit tree nursery growers; forest and ornamental nurserymen can also participate); persons joined together with similar professional aims and objectives.
- The association is:
 - A non profit organisation
 - A non political or religious affiliation
 - A non commercial or profit activity
- The principles of an association are:
 - *Professionalism*: only agricultural and horticultural growers can be represented
 - *Universality*: anyone or any organisation satisfying the criteria of the association can be a member
 - *Representation*: in case of nursery growers, each nursery grower must be represented and can express his opinion
 - *Autonomy*: associations can choose their development goals, action programs, and management of their resources
 - *Incompatibility* (between representation mission and commercial activity): a farmers' association is not allowed to develop commercial transactions with the association's members.

- The functions of the agricultural association are:
 - *Consultation*: refers to communication between members regarding relevant decisions affecting the association's programmes, common interests, shared goods, etc. It also refers to communication between members and government, regarding policy making, the associations' activities, etc.
 - *Information*: refers to facilitating access to various sources and types of information: technologies, agro-climate, market, policy, etc.
 - *Support*: this function refers to the role of associations in assisting growers in their individual and collective needs in order to contribute to the professionalism of the sector.

Advantages of participating in an agricultural association

Participation in agricultural associations:

- Improves access to technology and expensive resources for the members
- Improves technical knowledge of each member: they will receive training in different subjects following a calendar of nursery activities
- Improves planning of production to meet demand: the members will have better access to information about market and business opportunities
- Improves quality of the nursery products through application of a certification system
- Contributes towards strengthening the private sector. It helps private nurseries become more efficient and profitable.

The role of a member

- *Participation*: every member can have an opinion and make decisions
- *Responsibility*: every member is responsible for the information and goods shared
- *Fair communication*: every member should share strategic information
- *Fair competition*: agree on certain codes of practice; adapt production according to this agreement

What can members accomplish together?

- Organise training activities
- Implement a certification system
- Improve marketing efforts
- Organise division of labour in the association: member specialisation, for example as a mother stock nursery grower
- Provide specialised services to third parties
- Acquire or improve technology for all association members

Second meeting

2. Legal framework for a nursery association

- *Objectives*

During this meeting:

- *Growers should understand the legal requirements of the associations in Afghanistan*
- *Leaders within the members should be identified*

- *Procedures*

1. Explain the following legal requirements for the association:

1.1. Documentation required

- ❑ **Application form:** during this meeting you will explain the information included in the application form. You can find a copy in the Annex 4.
- ❑ **Bylaws:** it is a document developed by the association. It contains all the rules agreed among the members to regulate their common activities. The bylaws become the formal constitution of the association. You can find a template model in Annex 2. You can also find the ANNGO constitution in Annex 1.

1.2. Creation of a name and logo for the association

1.3. Creation of an organisational structure for the association

- ❑ **General Assembly:** integrated by all members
- ❑ **Board of Directors:** minimum of 5 members
 - Chairman
 - Deputy chairman
 - Administrative officer
 - 2 members from the Executive Board
- ❑ **Executive Board:** 3 members
 - Treasurer
 - Stock keeper
 - Clerk



Figure 4: Training on legal requirements for associations -ANNGO meeting, 2008 (K.Kashmiri)

1 4 Registration of the association in the Ministry of Justice

2. Registration of growers in the association. Collect the following data from each member:

2.1. Contact details

2.2. Production information:

- Nursery area (jaribs)
- Jaribs produced with fruit trees
- Number of trees/jarib
- Water access
- Species/varieties produced
- Number of budded trees
- Crop performance: yields, common pest and diseases, etc.
- Fruit tree demand: quantity, varieties, etc.
- Access to credit
- Market opportunities

2.3. *Identify leaders: during this meeting you should identify the members who could take management responsibilities in the association.*

Third meeting

3. Establishing the formal association

• Objective

During the third meeting, assuming that progress so far has been satisfactory, the group should define its organisational identity: name, logo, and organisational chart. The group must agree on the basic formal principles that will govern the activities of the association.

• Procedures

1. Go through the draft bylaws with the potential members
2. Create a name and a logo for the association
3. Elect the committee members and association officers who have to be named in the registration of the association
4. Define and clarify the roles of officers
5. Review the requisites for registration of the association



Figure 5: Election of office bearers at the inaugural meeting of Nangharhar, 2008 (S. Wright)

Check list of the registration of the association:

- ☐ Registration office: Ministry of Justice
- ☐ Application form
- ☐ Definition of Board of Directors
- ☐ Development of constitution and bylaws
- ☐ Agreement on the name and logo

Follow up meetings

4. The association work plan and further assistance to nursery growers

The nursery growers association immediately after registration still needs assistance in running itself, and to provide services for its members.

- Procedures
 1. Continue providing assistance with registration
 2. Define the final version of the association constitution after consultation with the association's legal advisor
 3. Define a work plan and additional activities

The work plan should be developed with the association officers and subsequently presented for discussion and approval to all members. The work plan should contain:

3.1. Specific collaborative programmes to be initiated by the association. Examples include:

- Mother stock plant production
- Rootstock production
- Marketing and promotion
- Production planning and coordination
- Service development to customers, such as:
 - Budding and grafting services
 - Orchard design and layout
 - Pruning services
 - Orchard management and IPM services
 - Pollination services



Figure 6: Nursery growers select varieties in PHDC Kabul, 2009 (E. Vernon)

The legal structure of a nursery growers association as a non-profit social organisation is not suitable for delivering customers services. These may be delivered by individual members, or interested members may consider forming a cooperative for delivering these services jointly.

3.2. Training opportunities for the members

The work plan should include specific training activities for growers. The following chart presents the training modules developed in this manual series:

TRAINING COMPONENT	TRAINING MODULE
Development and implementation of improved nursery standards	SERIES 1 The fruit tree nursery industry
<ul style="list-style-type: none"> Improved nursery growers' organisation, ANNGO and NGAs Marketing and management of fruit trees 	Manual 1 The fruit tree nursery growers' associations
<ul style="list-style-type: none"> Specialisation of nurseries in the development of mother stock nurseries ANNGO certification scheme for mother stock nurseries 	Manual 2 The mother stock nursery
<ul style="list-style-type: none"> Technical training for members in nursery production techniques ANNGO certification scheme for production nurseries 	Manual 3 The fruit tree nursery production
Improved orchard management	
<ul style="list-style-type: none"> Orchard planning and establishment Pruning and training fruit trees Pest and diseases identification, management and control Pollination guidelines 	SERIES 2 Fruit orchard management

3.3. The certification scheme

The nursery growers' association is normally eligible to join ANNGO. In this case, the association must adopt the ANNGO Fruit Tree Certification Scheme for producing certified planting materials (see Figure 7). Throughout this process your assistance will be critical.

The certification system is based on the following principles (Annex 3 presents the complete ANNGO Fruit Tree Certification Scheme procedures):

- The ANNGO Fruit Tree Certification Scheme aims to provide commercial fruit growers with certified true to type fruit tree saplings that are proven in terms of health and vigour.
- A production nursery that wishes to produce certified saplings must use certified budwood from a registered mother stock nursery. This is a commercial nursery that is specialised in the production of high quality propagation materials: scion material for grafting and budding, and cuttings.
- The mother stock propagation materials, scion and cuttings, must have an official certification label and accompanying traceability document with essential details of the materials and mother stock nursery. The traceability document may be a commercial invoice, packing list or delivery note.

- Plants produced using certified mother stock materials must be grown according to the standards specified in the certification scheme (the guidelines are explained in Manual 2 *The mother stock nursery manual* and Manual 3 *The fruit tree nursery production manual*).
- During the course of the growing season, the crop will be inspected at least once. Assessments will normally be made on the basis of visual examinations due to the lack of laboratory analysis facilities.
- The traceability instructions for the nursery production must be carefully followed. All required certificates, signs, labels, and traceability documents, must be in place.
- Records of all relevant information must be kept.
- If plants are entered for certification and after one or more inspections they are found to meet all the required conditions, a numbered certificate will be issued. The certificate will have a specific period of validity.

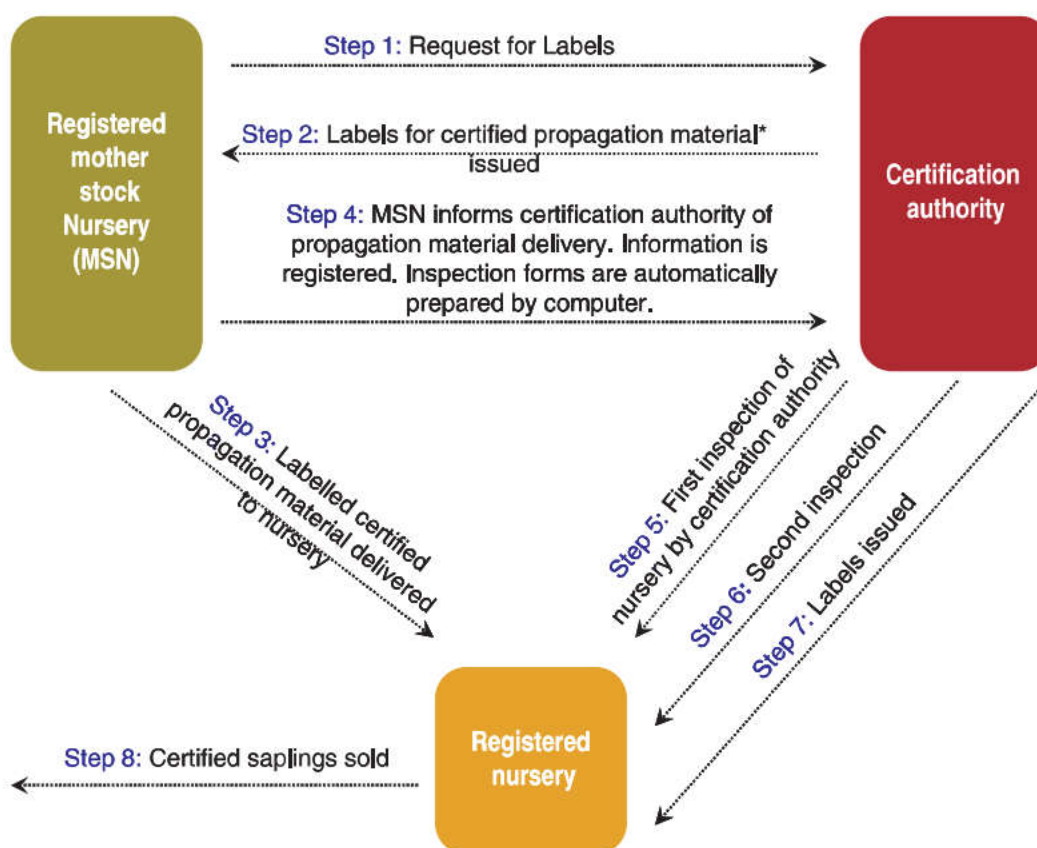


Figure 7: Steps of the fruit tree Certification Scheme.

Part 4

Marketing and management manual

By Greg Cullen

This section has been prepared for the use of the Afghanistan National Nursery Growers' Organisation (ANNGO) and its members. The manual is meant both for immediate benefit of the members and for long term development of ANNGO. The European Commission, which funds PHDP, is planning a further project to continue the initial work of PHDP in supporting the founding of ANNGO, and to develop ANNGO into a fully self sustaining organisation.

This marketing chapter is designed to be used by ANNGO, as a national body supporting the fruit tree nursery industry in the whole of Afghanistan; by the local nursery grower associations, and by the individual members. It is intended that the project, which follows on from PHDP, will provide technical support to each of the local nursery grower associations with the placement of a technical officer. It will be among the tasks of these technical officers to use this manual to keep the nursery growers fully aware of good marketing practices. The marketing of improved fruit tree and other planting materials will, in the future, be linked to the implementation of quality standards laid down in codes of practice and legally strict enforceable standards. The standards, registration and certification procedures are set down elsewhere in the PHDP publications.

1. What is marketing?

Marketing is the process of finding out what your customers want, and then supplying them with what they want at a profit.

Selling is just the final part of the process of marketing; finding out what customers want or need is the other major part of marketing. Selling is the process of persuading customers to buy your product; if you produce products that customers want it will be much easier to sell to them.

For the nursery grower, it is sensible to find out what customers want before starting any production. If the nursery grower does not find out what the customers need, then the nursery grower may be producing plants that the customer does not want and will not pay for.

The process of producing trees for sale can take more than two years, and it is mostly not possible to change anything in the middle of the production process. The nursery grower therefore should be planning his production at least two years ahead of his expected sales. Different aspects of planning are described in this manual series.

The fruit growers, that is, the people who buy the saplings from the nursery growers in order to plant orchards, should also be thinking of their customers. The trees and vines that the fruit growers plant may produce for the Kabul market, or for the export market. They may be for fresh market, or for processing, or drying. The demands from the fruit growers will change if the markets change, or if there is too

much production of one type of fruit. The nursery grower needs to know what his varieties of tree can be used for, since the fruit grower will often ask for advice from the nursery grower about what varieties to grow.

In Afghanistan, there are over 2500 nursery growers, with 22 nursery grower associations. If every nursery grower tried to expand his business, there would be severe overproduction of trees. Each nursery grower needs to have some idea of the total market for trees, and whether or not increasing production is a good idea. This is very much where the local and national associations can help the individual nursery grower plan his own production and marketing programme.

The nursery growers set out to produce and sell trees. However, they are generally the most knowledgeable horticulturists in an area, and can offer advice in planting orchards and other technical aspects. There may be opportunities for earning money from giving advice, or planting orchards under contract, or perhaps spraying under contract.

Producing what the customer needs

It is important to remember that in many cases at present in Afghanistan, the person planting orchards does not have much knowledge about varieties, or about the markets he will be supplying with the fruit. The nursery grower will often be more knowledgeable about varieties and suitability of those varieties for the different markets. The varieties of apricot most suitable for fresh market, for instance, are different from the varieties that are best for drying. For a crop such as peach, the grower will need a range of varieties so that he can pick and supply the market with fruit over a period of time.

For crops such as almonds, it is essential that the fruit grower plants at least two varieties together to ensure cross pollination. Most of the plums, and possibly some of the apricots, also need to be planted in orchards with more than one variety, otherwise the grower will not get any fruit. The nursery grower should be able to supply these combinations of varieties and give advice about the need for these varieties.

This manual does not give information about the varieties and how to grow them. Information about varieties will be given in other manuals. Many of the varieties of fruit and nuts have not had much testing in Afghanistan. PHDP has planted all the varieties in the country at the six different Perennial Horticulture Development Centres. These Centres are working to find out more about the different varieties and they all have regular Open Days to give out information they have gained. The nursery growers should come to these Open Days to make sure they have the same information that the orchard growers have. The orchard growers may be given advice on what varieties to grow, so they will then want to order those varieties from the nursery grower.

2. Planning for nursery growers

It has already been pointed out that for many trees there is a two year production cycle. This two year cycle does not count the time it takes to set up rootstock beds, or trees to produce rootstock seeds, or to plant mother stock trees. The full period from PHDP collecting bud wood for original source trees, to the time the certified trees can be delivered by the nursery grower is five years.

If we think of the different activities that have to be carried out by the nursery grower, and how far ahead he has to plan, we find that some activities have to be planned five or more years ahead, but others only need to be planned less than one year ahead. In the next chapters, we discuss the various types of planning that are needed.

If a nursery grower, or a nursery association, wants to bring in a new variety of apple or peach, the normal cycle would be

Middle year 1 Bring in budwood, bud onto rootstock to make mother stock tree

Beginning year 2 Cut back tree

Beginning year 3 Plant out grown mother stock tree in nursery

Middle year 4 Take budwood from mother stock tree, bud onto rootstock

Beginning year 5 Cut back tree

Beginning year 6 Lift and sell certified tree

The total period from bringing in budwood of a new variety and selling trees from that new variety is about four and a half years. It may have taken an additional five years to test the new variety, to see if it is better than other varieties.

We can call the different types of planning, long term, medium term, or short term. For nursery growers, the long term planning is related to the introduction of new varieties by bringing in new mother stock trees. Long term planning, or strategic planning, can be the name we give planning for two or more years into the future.

The more usual planning that we think of for nursery growers is the production planning, normally done on a two year basis. We can call this type of planning, "medium term planning", and we can say this relates to plans between one to two years into the future.

For plans of one year or less, we can give the name "short term planning" or Annual Plan. Of course, within that there will be even shorter term plans, such as the budding plan, or the tree lifting plan, but they do not really relate to the concept of marketing as we want to describe in this manual

2.1. Strategic planning for nursery growers

PHDP already asked the nursery growers to think about long term goals when they had the nursery grower association meetings to choose the clones for the mother stock trees. These mother stock trees are going to be in the ground and available to produce budwood for association members for at least the next five years. In the same way, the clones that were not selected by the nursery associations may not be available for several years.

While PHDP has plans to assess other varieties and clones in the national collections, it is not expected that there will be many recommendations before three to five years' of results have been obtained. As we have seen, it then takes more than four years to make new mother stock trees and produce certified trees from those mother stock trees. We can say, therefore, that the nursery grower associations, by picking the clones in 2008 (1387), have fixed the varieties and clones that will be grown in Afghanistan for the next ten years, until 2018 (1397).

The PHDP is supporting all the nursery growers through their local associations and ANNGO. The project has a long term programme for testing varieties and for introduction of new varieties. The project will work with ANNGO and other organisations to set the standards for testing. Eventually ANNGO should begin to provide direction to these programmes of testing and introduction, so the best varieties are available for the nursery growers to multiply and sell.

Another long term marketing plan needs to be made for the introduction of improved rootstocks. The development and introduction of virus tested and virus free planting materials is also a long term effort.

PHDP is helping the nursery growers to gradually introduce a certification system. The details of the certification standards are dealt with elsewhere. However, it is clear that it costs more to produce certified trees. It will therefore be necessary to ensure that the certified trees are sold at a higher price to cover the various costs. Part of the definition of marketing is providing what the customer wants *at a profit*.

2.2. Medium term planning for nursery growers

The medium term planning is very much related to the main production cycle for nursery growers producing budded saplings, which is the largest part of the fruit tree nursery production at the present time.

At the present time, most production of saplings is done without any actual sales orders being taken. While the objective must be to improve the situation with more early orders, for most nursery growers they have to begin the production cycle with little idea of how much to plant. Each individual nursery grower will make his own decision of how much to plant. However, the local associations should discuss the total programme of the association members.

ANNGO can have the main function of getting information about sales and calculating a reasonable number of trees for production the next year. The kind of information might be that there were good markets for apricots last year, and there could be more demand for apricot trees. Or that there is a big project for orchard planting coming, which will encourage tree planting and therefore tree sales. What we might expect is a message from ANNGO that the nursery growers should plan for a four per cent growth in apricot trees and a six per cent growth in almond trees, or similar kind of information.

This general information about the total number of trees is used at the time of sowing the rootstock seeds. This is in November each year. The next big decision is at the time of budding, when the variety choice is made. It should be remembered in the planning that not all the seeds will germinate; not all the saplings that grow will be of a good size, so some might be thinned out; that not all the buds that budded will take, and there are also losses after heading back in the first winter.

Most of the production planning will fall into the two year cycle, assuming that the budwood is available from the mother stock nursery. It is the job of the association to

ensure that there are enough buds of each clone for the nursery association members, so the association will need to collect information for its planning of the mother stock nurseries.

2.3. Short term planning for nursery growers

We have taken the short term planning period as just one year, so the short term plan is the annual plan. While different aspects of the business need their own plans, such as production plans, annual budgets and so on, the annual plan related to marketing can be called the Annual Promotional Plan.

As with the strategic, or long term plan, and the medium term plan, the amount of planning done is probably quite little at the level of the small nursery grower. Most of the promotional efforts will be done at the local nursery grower's association level, or at the national level with ANNGO.

The Annual Promotional Plan can include some or all of the following elements:

- Leaflets, catalogues, posters, banners
- AgFairs and similar shows
- Open Days (Field Days) at trials stations or at nursery growers' fields
- Radio, TV and newspaper advertising
- Public relations, press releases, interviews and similar for media
- Handouts (calendars, crop planners, T-shirts, mugs, pens, etc)
- Tree labels

Some of these various elements will be combined. Leaflets and catalogues should be prepared for use at Agfairs and other public events.

Each of the actions must be clearly thought out and prepared well in advance. For instance, if you want to put a picture of some fruit in a leaflet, you have to take the picture when the fruit is available. If you want to have fruiting trees in pots at Agfairs, then you have to put the trees in pots in the winter.

Each activity must be aimed at a target audience, with enough response to justify the expense. Agfairs attract thousands of visitors, who have no land to plant orchards. They will never be customers, so there is no point in preparing lots of leaflets for them to take away.

The cost of publicity and advertising should always be thought about. Newspapers, TV and radio are always looking for interesting news and educational items. A lot of information can be provided as news items, and free publicity can result.



Figure 8: Kabul AgFair, 2009
(L. Imburgia)

3. Market Segmentation

The basic idea of market segmentation is that there are different customers who need different kinds of product. It is obvious that an almond grower wants almond trees, and a peach grower wants peach trees, but this is not what is meant by market segmentation.

The main market segments in Afghanistan would be institutional buyers like donor-funded projects, commercial orchard growers and people or consumers who want one or two trees for a small home garden.

It is very early in the development of modern marketing of fruit trees in Afghanistan to be able to clearly describe market segments and say how they should be approached. However, some ideas are put forward which nursery growers can think about.

3.1. City gardens segment

- Eventually all the fruit and nut species sold should be of certified trees, which means they will have labels. For the home buyer, these labels or additional packaging could have information about variety and how to grow the trees and could include a colour photograph of the fruit.
- The varieties sold should be of self fertile varieties if possible. There could also be a market for budding two varieties on to one tree, giving pollination and different colour or different maturity fruit.
- The trees should be packaged individually, and sold at proper sites, to ensure that the tree the customer buys has the best chance of success.
- In other countries many consumers like to buy fruit trees growing in pots because they can be purchased and planted out at any time of the year. Some fruit trees, like apples on dwarfing rootstocks, can be kept growing in pots for consumers with small gardens.
- Some consumers may be interested to buy older fruit plants that have been trained to a small trellis inserted in the pot. For example, a peach tree can be fan-trained to a trellis; grape plants can also be sold in this way.

3.2. Commercial orchards segment

- The trees will all be certified trees as soon as this is possible, but very simple labelling is sufficient. The information about the trees is provided separately in leaflets or manuals.
- Pollinator varieties, and varieties for successional harvest are provided to the orchard grower according to a plan agreed with the customer, up to one or two years ahead of the sale.
- The trees are packed in bundles, and either delivered to the customer, or provided for collection on an agreed date.

3.3. Institutional buyers segment

- Product requirements will be similar to commercial orchard growers but the range of species and varieties as well as the quantity of saplings will probably be greater.
- Additional services such as packaging, transportation, consolidation and storage may be required.
- Contractual arrangements and terms of payment will probably be imposed by the buyer.

- Sales may be made by responding to advertisements, and by networking with key staff of institutions like government projects, NGOs, and donors.
- Several people of different backgrounds (such as an administrator, horticulturist and accountant) may be involved in making the buying decision.

4. Market Planning

Nearly all the tree nursery businesses in Afghanistan are one man or family enterprises. There are no specialist staff to organise marketing according to the ideas put forward in this manual. Much of the approach to modern marketing has therefore to come from ANNGO or the local nursery associations.

The market planning needs to be dealt with by people associated with ANNGO. At the moment, PHDP has two staff members who spend most of their time supporting ANNGO, in organisation development and in the development of mother stock nurseries and demonstrations. Now that much of the development work in setting up the local associations and in planting the mother stock nurseries is complete, they can spend more time on developing the marketing plans.

Any plans will have to be approved by the board of ANNGO. The market plans include the strategic plans for the industry as well as the annual promotional plans. The PHDP team will also assist in the medium term or production planning, although this is done mostly at the local association or individual nursery grower level. The support of PHDP will change over time, and new arrangements will be made when a new project starts in 2010.

The strategic or long term, planning only needs to be done once per year at the most. The nursery growers have just taken up the range of varieties and clones into their mother stock nurseries, and these will be the main varieties in production over the next ten years.

The market planning is thus mainly concerned with the annual promotion plan for 2009. It should be noted that PHDP has not been involved in the production of fruit trees of the nursery industry up until now. PHDP will limit its market support to the concept of promoting the certified trees available to the market mostly as from beginning 2012 (end 1390).

PHDP will work with the ANNGO to calculate the costs involved in producing certified trees, of different categories, to provide advice on pricing. PHDP will develop promotional efforts to inform fruit growers that they should be buying certified trees, and will assist the ANNGO members to develop product catalogues to attract buyers.

PHDP will also look at ways to improve physical distribution of trees. Maybe some specialist fairs can be organised where the nursery growers meet potential customers, and explain the benefits of buying certified trees. The target will be to start getting orders ahead of the budding season of 2010.

5. Sales Planning

There are some nurserymen who have specific strategies for the selling season. They lift their trees and transport them to some key location to sell the trees. Some nursery growers even buy or take charge of their neighbour's trees, and sell them on

his behalf. In Kabul, the nursery growers have taken up empty land opposite Kabul Silos for the selling season. Some nursery growers come from as far away as Herat or Jalalabad to Kabul.

These selling sites gradually get filled up, as the city rebuilds. The standard of trees is too low, particularly in regards to names of varieties, and the trees are all bare root, drying out before sale, so that the chances of the tree growing are quite low.

This system of just putting trees on a street corner and hoping for sales is not good enough. Apart from direct sales to the larger growers, the way forward for the nursery industry has to be through specialist outlets that can promote the good quality trees ahead of the selling season, and sell trees in good condition with some kind of quality guarantee.

It will be up to ANNGO to develop quality concepts, perhaps brand names linked to a quality control system. This way, the price obtained per tree should also be increased.



Figure 9: Selling saplings in plant market in Herat, winter 2009 (E. Vernon)



Figure 10: High quality saplings prepared for sale (E. Vernon)

6. Product Development

The concept of a product is often quite difficult for people to get hold of, but is important as part of the way of thinking in modern marketing terms. The nursery grower might think he is selling a plum tree variety Formosa, and that is the product. More correctly, we should think of the product as a certified plum tree Formosa grown on a seedling peach rootstock lifted and packed, with a label, and delivered at the farm gate. The same tree delivered to a Kabul shop, is a different product, and it has extra costs on it. The same variety of plum grown on a Myrobalan or other rootstock is a different product, with a different performance when grown in the field and with a different cost structure also.

The certified fruit tree, produced from a registered variety, is a different product from all the fruit trees sold in Afghanistan at the moment. The development of this product is the most important task for the nursery industry at the moment. This new product costs more to produce and it is worth more to the fruit grower (see next section), so the aim must be to achieve a better price for it.

One of the biggest changes in the products used will be the movement from seedling rootstock to clonal rootstock. Clonal rootstocks for apple have been tried before, but dropped out of favour as the knowledge, skills and planting materials disappeared in troubled times. PHDP aims to try a range of rootstocks for different crops in the future. Work in other countries indicates that the fruit growers could benefit from these rootstocks, but PHDP will gradually test and demonstrate these rootstocks prior to introduction. The nursery industry, through ANNGO, is invited to be partners with PHDP in the development of rootstocks and other technical developments.

Once more information about existing varieties has been obtained, the PHDP will be looking for introduction of new varieties where they are seen to be needed. The nursery industry will be a prime beneficiary in having new products to sell. Most very modern varieties will not be supplied by international nursery growers without agreements on paying fees or royalties for every tree produced of that new variety. It will be up to ANNGO to negotiate such agreements, collect the fees, and ensure that nobody multiplies the varieties without a licence.

The same system for producing and marketing certified fruit trees can also be applied to other types of plants such as ornamentals, medicinal and aromatic plants, and forestry seedlings.

7. Selling benefits

How do you sell trees? Or more precisely, how do you sell the certified trees of known varieties at a higher price to pay for the extra costs?

The answer is to talk to the customers about the extra yield, or better fruit quality, or greater suitability for storage. You are selling the benefits of buying your product.

Now, a certified tree of a known variety or clone can look almost exactly the same as a non-certified tree. It will be almost impossible standing opposite the Kabul Silo to get someone to pay more for your certified tree than for any other tree. The customer will just pick the tallest, most vigorous tree, or the cheapest tree.

The only way to get a good price for an improved tree is to convince the customer of the benefits that the customer will get. To plant one jerib of ordinary uncertified trees buying at 60 Afs per tree would cost 80 x 60Afs (80 trees per jerib at a spacing of 5m x 5m), a total of 4,800 Afs per jerib. The cost of high quality improved trees might be 180 Afs per tree, which would be 14,400 Afs per jerib, an extra 9,600 Afs per jerib. All other costs, fertiliser, land preparation, labour, irrigation, sprays would be the same. The almonds from the top Sattarbai clones can sell at 500Afs per kg, while ordinary Kheirodini or Qambari nuts will sell at less than 200Afs per kg. Even at yield levels of just 100kg per jerib after two or three years, the improved clone of Sattarbai can pay for the investment three times over.

This is just one calculation, and the benefits of the improved varieties have to be shown for the different varieties of the different crops. These benefits have to be shown in trial fields and demonstrations done by reputable people. The buyers of the trees have to trust the seller, so it is important that the authority certifying trees organises publicity for the benefits of certification.

It is also important to think about how to sell benefits at shows and Agfairs. The nursery grower needs to show the tree with the fruit it will get, not just bare trees. This may be with actual trees, prepared and grown in pots; or with posters and videos. Samples of fruit taken from a mature tree of the same clone would also be useful.

A large element of successful selling is to gain the trust of the customers. People planting orchards are investing for the next twenty years and it is very important that they get to know their nursery growers. Perhaps they will not know the nursery grower personally, but an alternative is for them to trust the nursery association which will recommend members who meet standards. This is a process that carries on over several years.

8. Pricing of Saplings

The present system of pricing saplings is very simple for most nursery growers. If they sell at a city market, they will try to get 60 Afs per tree for a budded sapling. Those nursery growers who sell at their farm to someone who will take it to market are perhaps prepared to accept 30 Afs per tree. This is because the average direct cost per tree is perhaps 10Afs per sapling, in payments for seed, fertiliser, and budding labour. The nursery growers often accept quite a high rate of losses, because the profit margin is high. The losses are mainly due to not being able to sell the trees, because they have produced more than the market needs, or because they do not have the sales contacts.

When the nursery growers move into a system of certified trees, there will be more costs incurred in the production cycle, and it becomes more important to calculate sales prices.

This manual cannot calculate the prices of each kind of sapling, but some principles can be applied. For instance, we can say that everything that the nursery grower does to improve the quality of the tree should yield a profit. So if there is a charge of 3 Afs for a label, the nursery grower might add 4 Afs. When the nursery grower pays 5 Afs per tree to transport the tree to a customer, he might want to charge the customer 7 Afs per tree.

Now this is a good theory, except that if a grower is inefficient, the price he is trying to get for his sapling is too high, and his neighbours will sell trees cheaper than him. It can be difficult for a small nursery grower to be efficient. One way to become more efficient is to specialise, and not try to do everything.

Most nursery growers know how much it costs for the different operations such as budding, as the cost is per sapling budded. However there are other costs which come for the whole field, such as ploughing, fertiliser and irrigation. These are called overhead costs. So if these costs come to 50,000Afs, and there are 10,000 saplings grown in the field, then the cost is 5Afs per tree.

In the same way, the grower should calculate his required profit. If the grower decides he would like an income of 40,000 Afs per year, and he is planning to sell 2,500 trees, then he should add $40,000/2,500$ Afs, or 16 Afs per tree to the price.

As the organisation supporting the nursery growers, ANNGO can do a survey and find out what it costs to produce saplings of the different types. They can then make recommendations to nursery growers about the sort of prices they should be selling trees at.

Price discounts may be offered for large orders, and for advance orders, especially if they are accompanied by down payments.

9. Association programmes

In relation to the association marketing efforts, several association programmes may contribute to increasing the association members' profit from the fruit tree nursery activities. The following chart presents a summary of possible association programmes and the corresponding training module developed in the PHDP outreach and publication programme:

ASSOCIATION PROGRAMME	TRAINING MODULE
IMPROVE FRUIT TREE PRODUCTION	SERIES 1 The fruit tree nursery industry
<ul style="list-style-type: none"> Marketing and promotion Production planning and coordination 	Manual 1, part 4 The fruit tree nursery growers' associations
<ul style="list-style-type: none"> Mother stock plant production Certified scion and cutting production 	Manual 2 The mother stock nursery
<ul style="list-style-type: none"> Certified rootstock production Certified sapling production Budding and grafting services 	Manual 3 The fruit tree production nursery
SERVICE DEVELOPMENT TO CUSTOMERS	SERIES 2 Fruit orchard management
<ul style="list-style-type: none"> Orchard design and layout Pruning services Pollination services Orchard management and IPM services 	

Annexes

Annex 1: Afghanistan National Nursery Growers Organisation (ANNGO)

(Translation from Original in Dari) Constitution

Art. One: Legal Status

A-1. Name:

Name of this organization is "Afghanistan National Nursery Growers Organization", and its acronym is ANNGO.

A-2. Powers

ANNGO is a legal organization with rights and responsibilities according to its constitution.

A-3. Location

The headquarters of ANNGO is located in Kabul City and its branches will be established in provinces as required.

A-4. Language

The language of these articles of association is in Dari and Pashto.

A-5. Legal status

ANNGO is a charity, social, non-governmental, non-political and non-profit organization. This organization will follow Afghan Constitution and NGOs law in pursuing its activities and goals, and will act according to these articles of association.

A-6. Registration

ANNGO is registered in Ministry of Economy as a legal entity.

A-7. Fiscal Year

The fiscal year for ANNGO is fiscal year of Afghanistan (Hamal to end of Hoot).

A-8. Logo

ANNGO has a special logo and stamp that has been approved by the Board of Directors and kept with head of Executive Board.

ANNGO has its independent publication to publicize its goals according to the Constitution of Afghanistan and Media Law, and will utilize mass media as required.

Art. Two: Goals and Activities

B-1. General Goals

ANNGO is a charity non-governmental organization and its activities are directed towards nursery development; trees and grapes improvement; extension of new varieties of fruit-bearing and non-fruit-bearing saplings; laboratory establishment; introducing fruit-bearing and non-fruit-bearing saplings, flowers and ornament grass; providing guidance for proper disease and pest control; provision of various technical services; provision of production and marketing guidance for nursery associations.

B-2. Sub-goals

ANNGO will pursue the following goals in order to provide required assistance for local nursery associations throughout the country:

1. Creating an environment for practical and theoretical cooperation among nursery growers at national level;

2. Organizing and establishing main business approaches and improvements in structure of member associations;
3. Improvement in access to nursery inputs such as machinery, vehicles, credit and marketing;
4. Publishing useful information for training member associations in order to improve access to modern and cost-effective technology, increase production and improve quality;
5. Presenting useful suggestions and ideas for the improvement of nursery industry;
6. Collection of needed data and information regarding nursery growing, proper disease and pest identification, and finding better ways to control them;
7. Making efforts to standardize nursery industry;
8. Attracting local and foreign investment and procuring financial and technical inputs for the development of nursery industry;
9. Providing legal support for member associations and advocate those activities that they pursue to achieve ANNGO goals;
10. Removing obstacles from development of nursery industry and lobbying for provision of more legal facilities for nursery growers;
11. Supporting and extension of international standards for nursery industry.

B-3. Services

ANNGO will provide the following services:

1. Encourage member associations in this business so that they produce various types of saplings;
2. Increase competition capacity in free market;
3. Establish required laboratories for member association;
4. Provide assistance for member associations in order to have access to various types of quality saplings from national and international sources with good prices;
5. Identify and address the problems and other needs of the associations in order to improve their lives and income;
6. Provide assistance in development and implement good nursery practices to provide quality products in the market.

Art. Three: Membership

C-1. Membership Qualifications

Each Nursery Association registered in the government can become a member of ANNGO.

C-2. Application of Membership

The application is submitted in special ANNGO format and then approved by Board of Directors. The member associations are bound to follow the articles of association and decisions of ANNGO.

C-3. Rights and Privileges

All association member shall have the rights and privileges of ANNGO according to these articles of association.

C-4. Voting Right

Each association member shall have one voting right in the issues put under voting.

C-5. Admission and Membership Fee

1. Admission Fee: Each member association (according to the number of members) is required to pay the sum of () once.
2. Membership Fee: Each member association (according to the number of members) is required to pay annually the sum of ().

C-6. Resignation

Each association member can resign by submitting a written request to the Chief Executive office, but shall not consider itself unaccountable regarding its performance (from admission

to resignation); regarding to newly paid fees, it cannot refund admission fee, membership fee, or donations.

C-7. Membership termination

- I. Each association member that fails to pay membership fee up to two months, shall have its membership terminated and will lose all respective ANNGO rights and privileges,
- II. If two-thirds of ANNGO Board of Directors decides to terminate membership of an association, the said association shall be dismissed from ANNGO. Reasons of dismissal:
 1. Deviation from articles of association, rules and decisions of ANNGO,
 2. Actions against ANNGO interest (Members of respective association should be contacted prior to decision on membership termination)

The said members shall be notified 10 days prior to membership termination. The member has the right to defend itself in front of the Board of Directors (Before decision of membership termination, members of respective association shall be contacted).

III. Dismissal of Chief of Board of Directors:

Board of Directors' Chief shall be dismissed by decision of two-thirds of Board of Directors. Reasons of dismissal:

1. Deviation from articles of association, rules and decisions of ANNGO,
2. Actions against ANNGO interests.

The said official shall be notified 10 days prior to dismissal. He/she has the right to defend himself/herself in front of Board of Directors.

Art. Four: Organization, Tasks and Powers

ANNGO has the following organizational structure:

1. General Assembly
2. Board of Directors
3. Executive Board

D-1. General Assembly

General Assembly is the supreme body of ANNGO.

General Assembly is composed of two selected representatives of each member association's board of directors.

D-2. Tasks and Powers of General Assembly

General Assembly decides on the following issues:

1. Determining number of members of Board of Directors
2. Approval and amendment of articles of association
3. Provision of directives to Board of Directors and Monitoring Committee
4. Addressing the issues referred by Board of Directors
5. Listening to reports of Board of Directors and taking decisions accordingly
6. Endorsement of regulations
7. Approval of establishment or dissolution of provincial or district branches,

D-3. General Assembly Meetings

Meetings of the General Assembly shall be convened once a year in date and venue determined by the Board of Directors. Extraordinary meetings shall be held according to written proposal of Executive Director and agreement of two-thirds of members of Board of Directors, or based on written request of one-third of members of General Assembly.

Decisions, resolutions and legal documents shall be endorsed with simple majority, and decision regarding extraordinary issues shall be taken with two-third majority of votes.

D-4. Invitation for General Assembly Meetings

- Members of General Assembly shall be invited in written
- The invitation for regular meetings shall be issued 3 weeks prior and in extraordinary meetings one week prior.

Art. Five: Board of Directors

C-1. Number of members of Board of Directors

- ANNGO Board of Directors is composed of two selected representatives of each member association's board of directors.
- Members of Board of Directors are appointed for a three-year period, and there is no limit in the number of consecutive periods they serve.
- The empty place of a member of Board of Directors (resignation, death or dismissal) shall be filled, through internal elections, with the association from which the said person was member of.
- Members of Board of Directors are not entitled to salary, except travel expenses and fare in internal or overseas working trips.
- Members of elected Board of Directors, in their first meeting, shall select ANNGO Director, deputy chief, secretary and financial officer.
- Board of Directors shall be responsible of implementation of decisions of General Assembly and shall represent ANNGO between two meetings of the General Assembly.
- In Board of Directors' meetings, the Chief Executive shall participate without voting right.
- In order to properly organize the meetings and prepare the agenda and decisions of Board of Directors, the secretariat is tasked to proceed in cooperation with Executive Board.
- The Secretariat has a chief secretariat selected by Board of Directors from its members.

C-2. Duties and Powers of Board of Directors

Board of Directors has the responsibility of leading every affair of ANNGO, and shall perform the following activities according to the articles of association and decisions of the General Assembly:

1. Provide directives to achieve goals set forth in the articles of association,
2. Present suggestions for amendment and revision of the articles of association to be considered and assessed in the General Assembly,
3. Approval of organizational structure and annual budget,
4. Determine the salary level for Executive Director and section managers and other staff members and determining the admission and membership fees,
5. Evaluate ANNGO financial status and present a report to the General Assembly,
6. Establish specialized committees as required,
7. Appoint and dismiss the Executive Director,
8. Approve the hiring of external experts required by ANNGO as suggested by the Executive Director,
9. Determine commission rate as suggested by the Executive Director,
10. Evaluate performance of specialized committees and report to the General Assembly,
11. Establish temporary training, vocational and professional institutions within ANNGO,
12. Approve punishment and reward for staff members as suggested by the Executive Director,
13. Organize agenda for General Assembly meetings,
14. Approve conferences and seminar held for provincial and district branches in order to address their problems and accessibility to opportunities,
15. Consider and decide on issues suggested by provincial or district branches,
16. Select ANNGO finance manager from Board of Directors,
17. Perform other duties and powers according to the articles of association.

C-3. Meetings of Board of Directors

- Regular meetings of Board of Directors are held every three months. Extraordinary meetings are held as suggested by majority of the members or written request of the Executive Director. Written invitation for regular meetings shall be issued 2 weeks prior and for extraordinary meetings one week prior to the meeting.
- Regular meetings of the Board of Directors shall be held in the presence majority of the members, and the extraordinary meetings shall be held in the presence of two-thirds of the members.
- Chief of Board of Directors shall represent ANNGO between two meetings of Board of Directors.
- In Board of Directors' meetings the Executive Director shall participate without voting right.

C-4. Committees

ANNGO committees are established in various sections as required. Head of respective committee shall fix the date and venue of meetings of the committee.

Art. Six: Executive Board

D-1. Appointment

- Executive Board is composed of the Director and section managers, who are selected by the Board of Directors in a competitive process and based on qualifications and expertise from among applicants.
- Those in nursery business cannot apply for Executive Board membership.

D-2. Staff selection

- Officers are appointed as suggested by the section manager and approval of the Executive Director,
- Workers are appointed as suggested by the administrator and approval of Executive Director.

D-3. Powers of the Executive Board

1. Executive Board executes and supervises daily performance of ANNGO and shall be accountable to the Board of Directors,
2. Executive Board is responsible body or implementing decisions of the General Assembly and Board of Directors,
3. Executive Director presents reports of activities of the executive board to the Board of Directors,
4. Executive Board implements annual budget and expenditures,
5. Executive Director shall not be employed in other places until the end of his directorship period,
6. Executive Board is bound to the articles of association, decisions and legal documents of ANNGO in all its daily actions,
7. Members of Executive Board are collectively responsible to Board of Directors in their individual and collective decisions.

D-4. Credibility of Deals and Performance of the Executive Director

The following are credible, as suggested by the Executive Director and approved by the Board of Directors:

1. Deals related to ANNGO movable and non-movable assets,
2. Borrowing,
3. Donation and credit transfer,
4. Proceed law-suits in the courts,
5. Sign cooperation agreement with national and international organization.

D-5. Privileges of the Executive Board

Executive Board is entitled to have proper salary and benefits for their performance.

Art. Seven: Financial Affairs

E-1. ANNGO is funded from the following sources:

1. Admission fee,
2. Membership fee,
3. Donations,
4. Commissions from services provided for the members,
5. Assistance from overseas donors approved by the government.

E-2. Auditing of Financial Affairs

ANNGO financial affairs shall be audited by an independent private institution according to accepted standards. Such an institution shall be hired by the Board of Directors.

E-3. Accounting

1. Accounting: Documents and account books of ANNGO shall be managed according to national and international applicable standards,
2. Accounting section shall be established for in-kind and cash deals of ANNGO by suggestion of Executive Director and approval of the Board of Directors,
3. Executive Director shall act as chief grantor according to monetary powers and limitations,
4. Money withdrawal and transfer from bank accounts shall be executed with signatures of the Executive director and Finance manager of ANNGO.

Art. Eight:

Miscellaneous Provisions

1. ANNGO budget, according to the articles of Association, shall be spent only for planned activities, and shall not be distributed among members,
2. Dissolution: Decision on ANNGO dissolution shall be taken with two-third majority of General Assembly members, and regarding ANNGO assets decision shall be taken according to NGOs Law,
3. All decisions of the General Assembly, Board of Directors and Executive Board and respective committees shall be registered in the Headquarters and will be published for respective organizations as required,
4. In case individuals, companies and organizations claim against ANNGO, the matter shall be resolved through negotiations, otherwise through arbitration, and if still not resolved, the issue is referred to the courts of law,
5. Executive director shall report crimes committed in the ANNGO to respective authorities,
6. Any change or amendment in this articles of association shall be reported to the registering authority,
7. Working hours and holidays of ANNGO staff members are the same as in the Afghan Workers Law,
8. This By-law has been approved and endorsed within 8 articles by the General Assembly of Afghanistan National Nursery Growers Organisation on 27 July 2008.

Annex 2: Example of approved association constitution

(Translation from Original in Dari)

District Nursery Growers Association Constitution

Chapter One General Rules

Article 1: The Basis

This By-law, following the rule of Article (35) of the Afghanistan Constitution, has been imposed to organize the activities of independent Nursery Growers of "[XXX]" district of XXX Province.

Article 2: Name of the Association

The name of this association is "XXX Nursery Growers' Association", which is called "Association" in this By-law.

Article 3: The Nature of Personality

The Association having legal personality has been established as a non-governmental, non-political, nonprofit, and an independent entity as a result of voluntary unity of [XXX] district Nurserymen, and practice its activities according to the rules of this By-law.

Article 4: The Premises

The premise of the Association is located in [XXX] District of [XXX] Province. Its branches, if required, can be established in side and out of the country according to the rules of the law.

Article 5: The Aims and Objectives

The Association has the following aims and objectives:

1. Supporting the members.
2. Representing the members against other actual and legal people (Government and people).
3. Giving the required suggestions and opinions to the relevant government administrations regarding the development of nursery industry.
4. Resolution of the respective problems of the members with government entities and defending their rights and activities.
5. Effective development of contribution and coordination among the members.
6. Providing the required facilities to the members and establishing the suitable conditions for their activities.
7. Providing the required suggestions and opinions for the improvement of the members.
8. Establishing the appropriate conditions and means to build up the technical and scientific status.
9. Conducting research and studies concerning nursery industry.
10. Marketing for member products and preparing plans accordingly.
11. Collecting and providing the required information to the members regarding concerning nursery industry, domestic and international markets, diseases related to nursery, and finding ways for their protection and treatment, relevant laws and regulations, the required data and statistics, and etc.
12. Encouraging, proposing, conducting workshops, training courses, holding exhibitions, and meetings for the development of the nursery industry.
13. Making efforts to standardize the nursery industry.
14. Participating at the welfare programs and protection of living environment.
15. Attracting the investment seeking for internal and external financial and technical means regarding the development of nursery industry.

Chapter Two

Membership and Structures

Article 6: Membership

1. Any nursery grower who runs a nursery for business can get membership of the Association.
2. The membership in the Association is voluntary, and applicant is considered the member of the Association by paying the identified annual membership fee, and submitting a written application as well as acceptance of this By-law.
The amount of membership fee shall be determined by the General Assembly.
3. The acceptance of members is by the Boards of Directors.
4. Any member has the right of one vote at the General Assembly.
5. Any member has the right to be elected, and to elect somebody else within the Association.
6. The member can lose his membership if he/she dies, resigns from the membership, and commits a crime or violates the rules of this By-law.
7. The decision of terminating a membership is taken by Board of Directors, and the termination letter is immediately submitted in written to the member or to his/her rest family members.
8. If the member does not agree upon the termination decision, he/she, within thirty days from the date of notification, can appeal to the General Assembly. The decision of General Assembly in this regard is the final decision.

Article 7: Organizational Structure

The organizational structure of the Association is as follow:

1. The General Assembly
2. The Board of Directors
3. The Executive Board

Article 8: The General Assembly

1. The general assembly is the highest decision making source that is composed of all members.
2. The ordinary meeting of the general assembly is held once a year during the first quarter of fiscal year. The special (remarkable) meetings are held on the demand of 10 % of members and acceptance of another 20 % or by the suggestion of two third of board of director.
3. The general assembly, in its first meeting, elects its chairperson and the secretary for managing the meetings. The chairperson can nominate himself/herself as a member of board of directors or its president.
4. At any duly called meeting of the General Assembly 50+1 percent shall constitute a quorum.
5. Decisions of the general assembly are taken by votes of majority (50+1). If a tie of votes happens, the party to which the chairperson has voted is considered valid.
6. Voting at the general assembly shall be open, unless the one third of presents members demand and majority decide, whether voting shall be secrete or open.

Article 9: Duties and Authorities of the General Assembly

The authorities and duties of General Assembly are as follow:

1. Achieving the aims of this By-law,
2. Selection and removal of board of directors,
3. Directing the board of directors in carrying out its duties,
4. Approving and modifying the By-law of the Association,
5. Identifying the amount of membership fee and fees of services,

6. Approving the work plan, next year budget, and other regulations,
7. Hearing the board of directors report, and assessment and taking decision regarding issues that are suggested by the board of directors,
8. Approval of the procedures and executive descriptions of executive board of the Association,
9. Decision regarding the dissolution, merging or mixture of the Association,
10. Decision concerning the membership of the association in other organizations,
11. Approval of establishing the special temporary committees, when required and proposed by board of directors, and assessment of their achievements,
12. CEO is member of board but has no vote.
13. Taking decision regarding other issues listed in the agenda.

Article 10: Board of Directors

1. The general assembly secretly, freely, and directly elects seven people among its members for establishing the board of directors of the Association for a two-year period. The election of its President is also held among seven winners through a separate voting by the general assembly.
2. The new election of members of the board of directors can be held only for the second time.
3. The meetings of the board of directors are normally held once in two months. And the special (remarkable) meetings of the board of directors can be held by suggestion of majority of the members, and the president as well as through a written letter of CEO. The invitations, with the agendas of the normal meetings, are sent to the members for participation in the meetings one week before, and the invitations, with agendas of the special (remarkable) meetings, are sent three days before the meetings by CEO.
4. The quorum of the board of directors is completed by the participation of majority of its members.
5. The decisions of the board of directors are taken by majority of its votes. If a tie of votes happens, the party to which the chairperson has voted is considered valid.
6. If the president, due to some excuses, can not attend the meetings, one of the members is determined as a supervisor.
7. The president represents the Association against other bona fide and mediating people.
8. The president and other members of board of directors perform their duties voluntarily, but they are paid for the expenses of the domestic and international business travels by Association.
9. The board of directors is responsible for its achievements for the general assembly.

Article 11: Duties and authorities of the board of directors

The board of directors of the Association has the following duties and authorities:

1. Implementing the decisions of the general assembly,
2. Directing the executive board for carrying on the associations' affairs,
3. Design and study of the budget and work plan of next year, and its submission to the general assembly,
4. Study of the balance and its submission to the general assembly,
5. Monitoring the use of budget, financial and accounting affairs of the Association,
6. Assigning the CEO of the Association,
7. Approval of recruitment and termination of employees of the executive board,
8. Hearing of report, advice, and suggestions of executive board and taking decision in this respect,

9. Arranging and recommending the agenda of the meetings of general assembly ,
10. Writing reports pertaining to the achievements of the Association and their submission to the ordinary meetings of general assembly,
11. Approval and termination of members' membership from the Association
12. Suggestion for amount of the membership fees and fees of services to the general assembly,
13. Supervising the complaints,
14. Assessment and taking decision regarding reports of the executive board or temporary special committees,
15. Identifying the salaries and bonuses for executive board and other employees of the Association who are assigned by CEO,
16. Accomplishing other duties and authorities that have not been specified for the general assembly according to the rules of this By-law.

Article 12: The Executive Board

1. The executive board has one CEO, one treasurer, and one secretary, and other directors of the special departments if it is required.
2. The CEO is identified and selected amongst the applicants applied for the related post through a competitive process and taking the qualifications into account by Board of Directors. The rest of the member board of executives are recruited by the Board of Directors due to the recommendation of CEO via a similar process and in accordance with the contract.
3. Members of the executive board are responsible individually for individual decisions and collectively for collective decisions.
4. Members of executive board are paid their salaries bonuses according to the contract.

Article 13: Duties and Authorities of Executive Board

1. Implementing and accomplishing the aims of the Association,
2. Accomplishing the daily affairs of the Association and implementing the decisions of the general assembly and board of directors,
3. Representing the association against the government organizations, people and other organizations according to the agreement of the board of directors,
4. Sending and receiving the administrative letters of the association,
5. Giving suggestions and advice to the board of directors for improving the activities of the Association,
6. Drafting and arranging of descriptions and executive regulations of executive board and temporary special committees to the board of directors,
7. Preparing the meetings' agenda of board of directors and organization of its meetings,
8. Reporting of its achievements to the board of directors,
9. Accomplishing other duties given by the board of directors.

Chapter Three Final Rules

Article 14: The Incoming Sources of the Association

The Association is funded by the following sources:

1. The membership fees,
2. Services fees,
3. Donations and assistance of the people and organizations.

Article 15: Financial Affairs

1. The financial and accounting affairs of the association are managed both by the cash and commodity according to the current and common system of the country in a transparent way.
2. The fiscal year of the Association is the solar year.

Article 16: Adjustment in the By-law

This By-law is adjusted due to the recommendation of ten percent (10%) of general assembly members, and approval of majority of two third of its members through an ordinary meeting.

Article 17: Dissolution, Joining and Mixing of the Association

1. The general assembly, based on the majority third four of the total votes of its members can take a decision about the dissolution, joining and mixing of the Association.
2. If a positive decision is taken regarding the paragraph one of this article, a commission will be assigned by the general assembly for clearance of accounts of the Association. Without dissolution, the asset and the properties of the Association are transferred to the joined and mixed organization. But while dissolving, the asset and properties of the Association are delivered to another organization which has the similar aims. If such organization doesn't exist, the mentioned assets and properties shall be founded for construction of a welfare institution upon determination by general assembly.

Article 18: The Logo or Stamp of the Association

The Association has a special logo which has been approved by the general assembly, and its stamp is kept in the office of CEO based on the agreement of the board of directors.

Article 19: Approval of By-law

This By-law, in three chapters and eighteen articles, has been drafted by the board of founders of the Association which contains 15 people and has been approved by the general assembly of the Nursery Growers, and it will be published after the registration.

Names and signatures of members of Board of Directors:

No.	Name	Position	Signature
1			
2			
3			
4			
5			
6			

Annex 3: ANNGO Fruit Tree Certification Scheme

Background

Nursery growers can improve their nursery businesses by helping their customers, the fruit growers, to develop more profitable orchards. Fruit growers can increase profitability of their orchards by:

- Increasing orchard yields, especially during the earlier years of the orchard's life.
- Growing varieties that mature earlier or later than the main season of supply to achieve higher prices.
- Growing varieties that produce fruit with special features that consumers are willing to pay more for. These features may relate to colour, size, flavour, fragrance, texture, shape, absence of seeds, ease of peeling, thickness of shells, and others.
- Growing varieties that have features desired by traders, such as long shelf-life and ability to withstand rough handling.
- Growing varieties that cost less to produce; for example varieties that are less susceptible to pests and diseases and therefore suffer lower losses and require fewer control measures; or varieties that produce smaller sized trees requiring less labour to manage.

In order to achieve all of the above, it is necessary to plant good quality fruit tree saplings. This creates an opportunity for nursery growers to increase their own profits by supplying fruit growers with saplings that are:

- Budded with scion varieties suited to the requirements of growers, traders and consumers.
- True to type.
- Free of harmful pests and diseases.
- Grown on appropriate rootstocks.
- Grown in the correct manner.

In February/March 2009 the Perennial Horticulture Development Project (PHDP) supplied over 10,000 saplings of registered mother trees of the best clones of stone fruits (almond, apricot, peach and plum) in Afghanistan to 26 Mother Stock Nurseries (MSNs). These MSNs belong to the 22 Nursery Growers Associations (NGAs) that are members of the Afghanistan National Nursery Growers Organization (ANNGO). The members and ANNGO have agreed to operate a voluntary certification scheme which PHDP will build up with the prospect of a statutory certification scheme coming into force at an appropriate time.

The establishment of MSNs is a major step towards the development of a national fruit tree certification scheme to ensure that high quality planting material will become available to fruit growers in Afghanistan. The mother trees will be used to produce high quality budwood in 2010. After verification by authorized inspectors, this material can apply for certification and be used for producing certified saplings that will become available to the fruit industry starting early 2012 (though advance orders can be made at anytime before then).

This document presents a provisional fruit tree certification scheme that will be the basis for registering nurseries and mother stock plants and certifying the plants that they produce. Starting in March 2009, the MSNs and their mother trees will be registered and inspected. Then by 2010 the nurseries producing saplings using certified budwood from the MSNs will also be registered so that the saplings can be entered into the certification scheme.

This certification scheme will continually evolve in response to fruit industry developments. For example, in April 2009 under PHDP, the Agha Khan Foundation will start the process of producing virus indexed foundation trees that will eventually result in virus indexed mother trees becoming available to MSNs. These virus indexed mother trees will require longer isolation distances than those specified in this document in order to reduce the risk of virus infection. Additional standards will also be introduced for seed trees, rootstocks, stool beds and other plant materials.

Eventually the pioneering role of PHDP in pioneering this certification scheme will be handed over to responsible institutions.

1. Definitions

- (a) "Off-type" means the plant is different from the variety or selection listed on the application for registration or certification.
- (b) "Registered Nursery" is a nursery that has applied to be registered and has received a registration number or nursery code.
- (c) "Material" refers to plants and planting materials such as mother trees, seed trees, seeds, rootstocks, budwood, and cuttings, etc.
- (d) "Foundation tree" means a tree, maintained by PHDP, which is to serve as a primary source of propagating material.
- (e) "Mother tree" means a tree to be registered and maintained by an applicant Mother Stock Nursery as a source of certified scion wood for growing certified saplings.
- (f) "Mother Stock Nursery" is a private nursery that grows registered mother trees.
- (g) "Certified saplings" means young trees propagated from registered stock and certified in accordance with the provisions of this article.
- (h) "Virus-infected" means infected by a virus or having symptoms or behavior characteristic of a virus disease.
- (i) "Virus indexed plant" is a plant that has been tested for virus infection by using indicator plants or by other standard procedures.
- (j) "Indicator plant" is a woody or herbaceous plant used for detecting viruses.
- (k) "Stool beds" are a planting of registered clonally propagated trees that are used exclusively for producing vegetatively propagated rootstocks.
- (l) "True to type" means the plant is genetically the same as the clone listed on the application for registration or certification.

2. Introduction to the ANNGO Fruit Tree Certification Scheme

Purpose

The ANNGO Fruit Tree Certification Scheme (the Scheme) aims to provide commercial fruit growers with certified true to type fruit tree saplings that are proven in terms of health and vigour.

How does the Scheme work?

Material entered into the scheme must be of known lineage. All materials must be grown under specific conditions with regard to site and isolation from other crops. During the course of the growing season, the crop will be inspected at least once by authorized inspectors. Assessments will normally be made on the basis of visual examinations due to the lack of laboratory analysis facilities.

The highest grade material is produced under very strict conditions. It may then multiply up through one or more grades until it is available for use by commercial fruit growers.

Certification

If plants are entered for certification and after one or more inspections they are found to meet all the required conditions, a numbered certificate will be issued. The certificate will have a specific period of validity.

What are the advantages of buying certified material?

Material certified under the Scheme is issued with a certificate (the certification label) endorsing its health status and its trueness to type. PHDP cannot guarantee that every plant certified under the Scheme will be completely free of pests or diseases – no practical, cost effective certification could do that. However, certified plants are grown under strict conditions which provide valuable plant health assurances.

3. Requirements for Registration and Certification

General

Nursery growers that wish to participate in the Scheme should be a member of an officially registered Nursery Growers' Association (NGA), and the NGA should be a member of the Afghanistan National Nursery Growers' Organization (ANNGO). The nursery should submit an application form (see Annex 3) to register their nursery.

Then, after receiving a nursery registration certificate (Annex 5), the nursery grower should submit an application to enter plants or planting materials in his nursery into the Scheme (Annex 6). Not all material on a nursery has to be entered for certification, but all material entered must meet the all the Scheme's standards and be clearly identifiable from material that is not entered into the Scheme.

Once a signed application form is received by PHDP, no participant may withdraw until the end of the calendar year. Registration of nursery or certification of fruit trees will not imply any warranty or guarantee on the part of PHDP or any employee thereof, beyond the terms of the Scheme (see Disclaimer in Section 6).

Responsibility of Applicant

The applicant nurseryman shall be responsible, subject to approval by PHDP, for the selection of the location and the proper maintenance of registered plants being grown under the provisions of the Scheme. The applicant shall be responsible for maintaining the identity of fruit trees entered in the Scheme in a manner approved by PHDP.

Standards for Mother Trees

- a) Each planting location shall be subject to approval by PHDP and shall be in an area suitable for healthy growth with minimal risks for spread of infectious pests and diseases.
- b) Water supply should be uncontaminated (recirculating water should not be used unless it has been efficiently decontaminated). Fields where drainage water from other fruit tree nurseries or orchards may enter should be avoided.
- c) In order to reduce the risk of soil-borne infection, previous cropping should not have included fruit plants of the same genus.

- d) Plants entered in the Scheme shall be kept in a good growing condition and pests shall be effectively managed. Suitable precautions shall be taken in cultivation, irrigation and in other farming practices to guard against spread of disease.
- e) Materials and tools should be disinfected, and used only for the crop concerned. Secateurs should be disinfected between pruning trees of different clones.
- f) There should be no off-types (if off-types are seen, they should be removed)
- g) Mother plants shall have originated from registered clones maintained by PHDP or other sources approved by PHDP.
- h) A mother plant may not be located within 5 meters of any non-registered plant of the same genus. Only registered trees are permitted in a registered block of mother trees. Registered mother trees may not be used for propagation purposes until trueness to type has been established.
- i) There should be a gap of one tree between mother plant of different clones in the same row (i.e. if the trees are spaced 1.2 meters apart, then there should be a gap of 2.4 meters).
- j) There should be a sign at the beginning of each variety/clone of mother plants showing the row number and clone number. Signs should also be used at a beginning of a new row.
- k) Each mother plant shall bear a permanent number. Labelling of each registered mother tree shall be done in a manner approved by the certification authority (ANNGO-PHDP).
- l) All the mother plants should be recorded on a simple map showing their identity and location in terms of row numbers and relative positions within the rows in accordance with their actual identity and position in the nursery.
- m) Mother trees shall be planted and maintained in a manner and at sufficient distance that branches of different clones do not overlap.
- n) There should be no weeds or intercrops growing within 1 meter of the mother trees. The ground in a mother tree block and for a distance of 5 meters surrounding it shall be kept either clean cultivated or in an approved, properly controlled, ground cover.
- o) To assure that the inspections required by this Scheme are performed properly and to provide close working knowledge of field operations, the nurseryman shall notify PHDP, in advance, of removal of plants entered in the Scheme so that approval can be granted before the work is done.
- p) There may be no budding, grafting or top working of certified mother trees.
- q) Flowers should be removed before they open.

Standards for Certified Fruit Trees (Saplings)

- a) Each planting location shall be subject to approval by PHDP and shall be in an area suitable for healthy growth with minimal risks for spread of infectious pests and diseases.

- b) Water supply should be uncontaminated (recirculating water should not be used unless it has been efficiently decontaminated). Fields where drainage water from other fruit tree nurseries or orchards may enter should be avoided.
- c) In order to reduce the risk of soil-borne infection, previous cropping should not have included fruit plants of the same genus.
- d) Plants entered in the Scheme shall be kept in a good growing condition and pests shall be effectively managed. Suitable precautions shall be taken in cultivation, irrigation and in other farming practices to guard against spread of disease.
- e) Materials and tools should be disinfected, and used only for the crop concerned.
- f) No off-types (if off-types are seen, they should be removed)
- g) Certified saplings shall be planted sufficiently apart to maintain their identity. There should be a distinct gap (of at least 80cm) between saplings of different clones in the same row.
- h) All certified saplings shall be designated as to scion and rootstock sources. This information should be shown on the nursery map and signage.
- i) There may be no rebudding or regrafting of rootstocks unless the rootstock is reworked from the same certified mother tree sources as used originally.
- j) Fruit tree saplings being grown for certification shall be on rootstocks approved by PHDP. In the future the rootstocks will originate from registered seed trees or from registered stoolbeds; until then, fruit tree saplings being grown for certification may be grown on non-certified rootstocks.
- k) Scion material (buds/graftwood) shall have originated from registered mother trees maintained by registered Mother Stock Nurseries.
- l) There should be no weeds or intercrops growing within 1 meter of the saplings. Ground in a certified sapling block and for a distance of 5 meters surrounding it shall be kept either clean cultivated or in an approved, properly controlled, ground cover.
- m) All certified saplings meeting the requirements of the Scheme, when sold are to be bundled in accordance with commercial practice and shall be identified by one or more legible printed labels that designate the clone, rootstock and certification number.

Eligibility

Any type of tree fruit, when approved, is eligible for entry in the Scheme as provided in this document.

For certification of a mother tree in a Mother Stock Nursery, the certification authority will be notified at the time of planting of the intention of the applicant to enter the trees for certification, and the application should be made at least 1 year before propagating material is used from the tree.

4. Inspection of Plants Entered for Plants for Certification Procedure

Inspection and testing procedures prescribed in the Scheme may be carried out only by

PHDP staff or by persons assigned by PHDP and shall be conducted in a manner and at times approved by PHDP.

At least one visual inspection shall be made of mother trees intended for production of certified scion materials (budwood or graftwood) during each growing season. .

At least one visual inspection shall be made of rootstocks intended for budding or grafting for the production of certified saplings during the first growing season. At the request of PHDP any undesirable rootstocks shall be rogued before budding or grafting. At least two visual inspections shall be made of saplings during the growing season following budding or grafting.

In the future, virus indexed plant materials will become available and virus indexing services may be used to test plants entered for certification.

The certification authority shall refuse certification in part or for all of a planting if plants have been propagated from registered trees determined to be significantly affected by a virus or virus-like disease or if other requirements of this program have not been met.

If plants are entered for certification and after one or more inspections they are found to meet all the required conditions, a numbered certificate will be issued. The certificate will have a specific period of validity from the date of issuance through to 31 March, so long as the certification authority does not suspend or cancel it for reasons given in section 4 of this certification scheme.

Labelling and Identity

Labelling. Certification labels will be the official certification for the identification of certified saplings, budwood, cuttings and seed that meet the requirements of the Scheme. Registered nurseries will reimburse the authorized supplier of certification labels for all certification labels supplied. This reimbursement will be based on the cost incurred by the certification authority.

Identity. A person selling certified fruit tree saplings or other certified planting materials is responsible for the identity of the planting materials bearing a label and for ensuring that the certified planting materials meet the requirements of the Scheme. Persons issued labels authorized by the Scheme shall account for certified planting materials produced and sold and keep the records required by the certification Scheme.

Records of Disposal of Certified Plants/Planting Materials

Nursery growers are required to keep records of all disposal (e.g. sale or own use) of certified propagation materials (budwood, cuttings, saplings, seeds with certification labels) in registration book provided by the certification authority. The registration book must be available to the certification authority on request. The records should show the date of disposal, customer (nursery code), fruit species, variety (clone number), label number and quantity.

5. ENFORCEMENT

Refusal, Suspension or Cancellation

Certification may be refused, suspended or cancelled for any plants in part or all of a planting under any of the following conditions:

- a) The requirements of this chapter have not been met.

- b) The plant is found to be virus-infected or off-type.
- c) A certified tree is found upon indexing to be virus-infected.
- d) Plants are seriously infected with pests or diseases.
- e) For any reason the identity of a plant becomes uncertain or has not been properly maintained.
- f) A certification number is misused.
- g) The status of planting materials produced under the provisions of the Scheme is knowingly misrepresented.

6. APPLICATION AND FEES

Application for registration of a nursery

Application for registration of a nursery shall be made yearly on or before January 31 (see Annex 3). Following registration the nursery will receive a nursery registration certificate with registration number for the nursery (see Annex 5).

Application to enter plants and planting materials into the Scheme

Application for certification of plants (such as saplings) or planting materials (such as seeds, buds and rootstocks) shall be made yearly on or before June 30. The application form is presented in Annex 6.

The applicant nursery shall provide all information pertinent to the operation of this Scheme and shall give his/her consent to the certification authority to take propagating wood from any tree for testing purposes.

Fees

Application to register a nursery as well as to certify propagation materials or saplings will require a payment of fees to be defined by the certification authority.

7. DISCLAIMER

The issuance of a certified plant label under this Scheme affirms solely that the labelled fruit tree sapling or scion material and rootstocks have been subjected to certification standards and procedures by the certification authority.

PHDP disclaims all express or implied guarantees, including without limitation, implied guarantees of salability and fitness for particular purpose, regarding all plants, plant parts, and plant materials under this Scheme.

PHDP is not responsible for disease, genetic disorder, off-types, failure of trees to perform, mislabelling or otherwise, in connection with this Scheme. No grower, nursery dealer, government official, association, NGO or other person is authorized to give any expressed or implied guarantee, or to accept financial responsibility on behalf of PHDP regarding this Scheme.

8. PENALTIES

AANGO will decide about implementing penalties for those nurseries that abuse the present certification scheme.

THE CONTENTS OF THIS PUBLICATION ARE THE SOLE RESPONSIBILITY OF IAK AGRAR CONSULTING GMBH AND CAN IN NO WAY BE TAKEN TO REFLECT THE VIEWS OF THE EUROPEAN UNION.

Perennial Horticulture Development Project

Ministry of Agriculture, Irrigation and Livestock
Horticulture Building, Jamal Mina, Kabul, Afghanistan

Contact: Greg Cullen, Team Leader
afghanistanhorticulture@gmail.com
www.afghanistanhorticulture.org

